

WHAT IS CLAIMED IS:

1. A surface acoustic wave device comprising:
a surface acoustic wave element; and
a package containing the surface acoustic wave element,
the package including a main body having an opening and a
hollow space therein, a cover provided on the upper surface
of the main body of the package and arranged to close the
opening portion of the main body of the package, signal
electrodes arranged to transmit a signal input from the
outside of the package and a signal output from the surface
acoustic wave element, and a grounding electrode for
grounding an unwanted electromagnetic wave generated inside
the package; wherein

an insulating joining material is arranged to join the
main body of the package and the cover, a metallized
electrode which is located above the signal electrodes and
is not in contact with the signal electrodes and the
insulating joining material is provided at a fixed location
of the main body of the package, and the metallized
electrode is arranged to be conductive to the grounding
electrode.

2. The surface acoustic wave device according to claim
1, wherein the package is made of one of an insulating
material and ceramics.

3. The surface acoustic wave device according to claim
1, wherein the main body of the package includes a substrate
and at least one frame body provided on the periphery of the

substrate.

4. The surface acoustic wave device according to claim 3, wherein the surface acoustic wave element is fixed substantially in the center of the substrate.

5. The surface acoustic wave device according to claim 1, wherein the surface acoustic wave element is electrically connected to the grounding electrode and the signal electrodes.

6. The surface acoustic wave device according to claim 3, wherein the grounding electrode is arranged so as to connect the vicinity of the middle point of each of a pair of two facing sides on the surface of the substrate on which the surface acoustic wave element is fixed.

7. The surface acoustic wave device according to claim 1, wherein the grounding electrode is in contact with the bottom surface of the surface acoustic wave element.

8. The surface acoustic wave device according to claim 3, wherein the grounding electrode is arranged so as to continuously extend over the outside surface and bottom surface of the substrate.

9. The surface acoustic wave device according to claim 1, wherein the surface acoustic wave element is grounded by the grounding electrode such that the grounding electrode absorbs an unwanted electromagnetic wave generated by the

surface acoustic wave element.

10. The surface acoustic wave device according to claim 3, wherein the at least one frame body includes two layers defining an upper frame body and a lower frame body.

11. A surface acoustic wave device comprising:

a surface acoustic wave element; and

a package containing the surface acoustic wave element, the package made up of a main body of the package of an insulating material having a hollow space therein, a cover of an insulating material provided on the upper surface of the main body of the package and for closing the opening portion of the main body of the package, signal electrodes for transmitting a signal input from the outside of the package and a signal output from the surface acoustic wave element, and a grounding electrode for grounding an unwanted electromagnetic wave generated inside the package; wherein

the main body of the package and the cover are joined by thermocompression bonding, a metallized electrode which is located above the signal electrodes and is not in contact with the signal electrodes and the cover is provided at a fixed location of the main body of the package, and the metallized electrode is arranged to be conductive to the grounding electrode.

12. The surface acoustic wave device according to claim 11, wherein the package is made of one of an insulating material and ceramics.

13. The surface acoustic wave device according to claim 11, wherein the main body of the package includes a substrate and at least one frame body provided on the periphery of the substrate.

14. The surface acoustic wave device according to claim 13, wherein the surface acoustic wave element is fixed substantially in the center of the substrate.

15. The surface acoustic wave device according to claim 11, wherein the surface acoustic wave element is electrically connected to the grounding electrode and the signal electrodes.

16. The surface acoustic wave device according to claim 13, wherein the grounding electrode is arranged so as to connect the vicinity of the middle point of each of a pair of two facing sides on the surface of the substrate on which the surface acoustic wave element is fixed.

17. The surface acoustic wave device according to claim 11, wherein the grounding electrode is in contact with the bottom surface of the surface acoustic wave element.

18. The surface acoustic wave device according to claim 13, wherein the grounding electrode is arranged so as to continuously extend over the outside surface and bottom surface of the substrate.

19. The surface acoustic wave device according to

claim 11, wherein the surface acoustic wave element is grounded by the grounding electrode such that the grounding electrode absorbs an unwanted electromagnetic wave generated by the surface acoustic wave element.

20. The surface acoustic wave device according to claim 13, wherein the at least one frame body includes two layers defining an upper frame body and a lower frame body.

THE UNIVERSITY OF CHICAGO